State of Hawai'i DEPARTMENT OF LAND AND NATURAL RESOURCES Division of Forestry and Wildlife Honolulu, Hawai'i 96813

February 11, 2010

Chairperson and Members Board of Land and Natural Resources State of Hawai'i Honolulu, Hawai'i

Board Members:

SUBJECT:

Approval of the Subordination of Mineral Rights on Lands Owned by Pietsch Properties, LLC, in Pupukea, Oahu, TMK (1) 5-9-005:067, to the Natural Resources Conservation Service

- AND -

Approval for the transfer of a Conservation Easement to be Acquired with Funds from the Legacy Land Conservation Program, from the Maui Coastal Land Trust to the North Shore Community Land Trust, on Lands Owned by Pietsch Properties, LLC, in Pupukea, Oahu; TMK (1) 5-9-005:067

SUMMARY:

On behalf of the Natural Resources Conservation Service (NRCS), U.S. Department of Agriculture, DOFAW is requesting the approval of the Board for the subordination of mineral rights on lands on lands owned by Pietsch Properties, LLC, in Pupukea, Oahu. On behalf of the Maui Coastal Land Trust (MCLT), DOFAW requests approval for the transfer of a conservation easement, to be acquired by MCLT with funds from the Legacy Land Conservation Program (LLCP), from the MCLT to the North Shore Community Land Trust (NSCLT) under Section 173A-9, Hawaii Revised Statutes (HRS).

BACKGROUND:

On February 13, 2009, the Board approved a LLCP grant of \$609,425 to MCLT for the acquisition of an agricultural conservation easement over 27.44 acres, in Pupukea, North Shore, Island of Oahu, TMK (1) 5-9-005:067, ("Subject Property") to be held by NSCLT. Pursuant to this approval and the Governor's release of funds (Attachment A), the Chairperson, on behalf of BLNR, entered into a grant agreement with MCLT on June 30, 2009.

The Subject Property is located in Pupukea on the North Shore of the Island of Oahu, Koʻolauloa District; TMK (1) 5-9-005:067. It is zoned Agricultural District (State) and Ag-2 General Agricultural District (county). The current use of the property is residential and agricultural.

DISCUSSION:

Subordination of mineral rights

MCLT is also receiving acquisition funding for this project from the federal Natural Resource Conservation Service (NRCS) Farm and Ranchland Protection Program (FRPP). On October 1, 2009, NRCS submitted information on the mineral resources in the area of the Subject Property and requested that the Department initiate the evaluation process for the consideration of State mineral rights subordination (Attachment B).

On November 19, 2009, the Board authorized DOFAW to process the NRCS request pursuant to HRS sections 182-2 and 182-4, and the June 30, 2009, Memorandum of Understanding (MOU) (Attachment C) between the Board and NRCS. In this submittal, the process for subordinating mining rights was described as follows:

- 1. Publication of a notice of the proposal to subordinate mining rights on the Subject Property at least once in each of three successive weeks in a newspaper of general circulation in the City and County of Honolulu.
- 2. Hold a public hearing within six weeks of the first publication notice.
- 3. Following the public hearing, the Board shall determine whether the protection of the land through the subordination of mineral rights is of greater benefit to the State than potential mining uses of the land.
- 4. If the Board determines that the protection of the land through the subordination of mineral rights is of greater benefit to the State than potential mining uses of the land, the Board may then authorize the issuance of a subordination of mineral rights to NRCS subordinating the State's right to mine or extract minerals form the Subject Property.

Following the November 19, 2009, approval, staff published public notice in the Honolulu Star-Bulletin on December 16, December 23, and December 30, 2009, and held a public hearing on January 13, 2010 (Attachment D). All presenters of written and oral testimony were in support of the project. NRCS, as the applicant, was required to pay the administrative costs associated with the public notice and hearing that are required by HRS section 182-4.

On behalf of NRCS, DOFAW is requesting the approval for the subordination of mineral rights on the Subject Property. According to NRCS, the FRPP must require subordination of State mineral rights prior to releasing funds as part of its duty to acquire legally sufficient title to the conservation easements it funds. Pursuant to HRS section 182-2 the Board may, "release, cancel, or waive the reservation whenever it deems the land use, other than mining, is of greater benefit to the State as provided for in section 182-4." In an August 7, 2009, report submitted by NRCS, titled "Geology and Surface Mining Evaluation Report for the Sunset Ranch Easement, Tax Map Key Number (1) 5-9-005-067, O'ahu, Hawai'i," Dr. Michael Garcia stated the following:

Based on my examination of the published work on the geology of this area and my extensive geologic experience in Hawai'i, I conclude that there is an absence of significant mineral resources on the Property and land of commercial feasibility for surface mining or geothermal energy, and therefore the potential for such extraction is so remote as to be negligible.

In light of Dr. Garcia's findings, the potential of a benefit to the public from any mining activities on the Subject Property appears remote. The value of protecting these lands for agricultural and open space values, on the other hand, is apparent in its success in receiving federal, State, and county funding from competitive grant programs. Given that subordination of State mineral rights to provide for conservation of the Subject Property appears to provide a greater public benefit in this instance, and based on the supportive results of the public hearing, DOFAW recommends the subordination of mineral rights for the Subject Property.

Additionally, the Department consulted with Office of Hawaiian Affairs (OHA) in this process. OHA expressed concern over any future subordination of State mineral rights on publicly owned and/or ceded lands; however, OHA stated its support and encouragement for this specific project due to its location on private lands and goals of protecting agricultural values.

Transfer of land under HRS § 173A-9

On February 13, 2009, the Board approved a Legacy Land Conservation Program grant of \$609,425 to MCLT for the acquisition of an agricultural conservation easement over 27.44 acres, in Pupukea, North Shore, Island of Oahu, to be held by NSCLT. Although the project application indicated that NSCLT would be the intended end-holder of the conservation easement, NSCLT is not participating in the original transaction due to federal funding arrangements, and is not a party to LLCP grant agreement between MCLT and BLNR. MCLT has signed the grant agreement as sole recipient and is responsible to BLNR for all commitments under this agreement.

Per Chapter 173A, HRS, Board approval is required for such transfers. HRS section 173A-9 states that any "land acquired by any nonprofit land conservation organization under this chapter may be sold, leased, or otherwise disposed of with the prior written approval of the board." On January 20, 2010, MCLT requested Board approval for assignment of the conservation easement and grant agreement to NSCLT.

MCLT has stated that this transfer will be done for no value. HRS section 173A-10 states that whenever any such land is sold, "that portion of the net proceeds (sale price less actual expenses of sale) of such sale equal to the proportion that the grant by the State bears to the original cost of the land or other property shall be paid to the State."

As a nonprofit land conservation organization focusing on protection of lands similar to the Subject Property, NSCLT is an appropriate holder for this conservation easement. NSCLT has submitted documentation of its nonprofit status under 501(c)(3) of the Internal Revenue Code. NSCLT's mission statement is as follows: "The North Shore Community Land Trust (NSCLT) protects, stewards, and enhances the natural landscapes, cultural heritage, and rural character of ahupua'a from Kahuku Point to Ka'ena." Provided that the transfer is gifted for no value (thus not triggering HRS 173A-10, requiring an amount of the net proceeds to go back to the fund), DOFAW recommends the transfer of this property.

RECOMMENDATIONS: That the Board

- A. Authorize the issuance of a quitclaim deed to the NRCS subordinating the State's right to mine and extract minerals on the Subject Property for the purpose of promoting an agricultural easement project with MCLT, NSCLT, and NRCS, subject to the following conditions:
 - 1. If the agricultural conservation easement is abandoned or terminated in any way whatsoever, the State's right to mine and extract minerals on the Subject Property shall automatically be restored;
 - 2. If NRCS funding or participation is withdrawn at any point before or after the acquisition, the State's right to mine and extract minerals on the Subject Property shall automatically be restored;
 - 3. The owner of the Subject Property and the owner's successors and assigns shall not have the right to mine as the State continues to retain the mineral rights;
 - 4. Review and approval by the Department of the Attorney General; and
 - 5. Such other terms and conditions as may be prescribed by the Chairperson to best serve the interests of the State.
- B. Authorize a consent to assignment of the conservation easement and the transfer of the conservation easement over the Subject Property from MCLT to NSCLT, subject to:
 - 1. The assumption by NSCLT of all duties and responsibilities under the conservation easement and LLCP Grant Agreement with MCLT;
 - 2. The continuation of MCLT's duties and responsibilities under the LLCP Grant Agreement with MCLT; and
 - 3. The review and approval of the Department and the Attorney General.
- C. Authorize the Chairperson to execute the documents necessary to effectuate these recommendations.

Respectfully submitted,

PAUL J. CONRY, Administrator Division of Forestry and Wildlife

APPROVED FOR SUBMITTAL:

LAURA H. PHEILEN, Chairperson Board of Land and Natural Resources

ATTACHMENTS:

Attachment A: Governor's approval of Fiscal Year 2009 awards

Attachment B: NRCS's October 1, 2009, request for subordination & supporting

documents

Attachment C: NRCS and BLNR Memorandum of Understanding regarding mineral

rights subordination

Attachment D: Summary of January 13, 2010, public hearing regarding mineral rights

subordination



EXECUTIVE CHAMBERS

HONOLULU

FILCEIVED

MAY 20 ATT 20

LINDA LINGLE GOVERNOR

May 20, 2009

TO:

The Honorable Laura H. Thielen, Chairperson

Board of Land and Natural Resources

SUBJECT:

Request for Approval of \$4,700,000 from the Land Conservation Fund for

Grants Through the Legacy Land Conservation Program

The Department of Land and Natural Resources (DLNR) request to release \$4,700,000 from the Land Conservation Fund (LCF) for the purchase of lands for State, county and non-profit land conservation organizations as authorized by the Legacy Land Conservation Program, has been reviewed.

The request, which includes eight grants purchasing a total of 173.8 acres statewide, has been reviewed and I have approved the following: 1) purchases by the State of Hawaii, totaling \$2,689,957 for lands at Honouliuli Preserve, Oahu; Hamakua, Kailua, Oahu; North Kohala, Hawaii; and Lapakahi, Kohala, Hawaii; and 2) \$609,425 for the purchase of 27.44 acres of conservation easement in Pupukea, Oahu, contingent on acquiring \$1,100,000 in federal matching funds.

The State's fiscal situation, reduction in Conveyance Tax revenues, and impending legislative amendments to the LCF will significantly affect LCF funding. A balance should remain in the LCF to preserve its function during the period of reduced funding.

Your understanding in this matter is appreciated.

c: Honorable Georgina K. Kawamura

United States Department of Agriculture



Natural Resources Conservation Service PO Box 50004 Honolulu, Hi 96850 808-541-2600

October 1, 2009

Paul Conry, Director
Division of Forestry and Wildlife
Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl St., Rm. 325
Honolulu, HI 96813

Re: Mineral Rights Subordination - Sunset Ranch

Dear Mr. Conry,

The Natural Resources Conservation Service is seeking to place a Farm and Ranchlands Protection Program (FRPP) easement on a property owned by Pietsch Properties LLC. The easement will restrict future developments of the property and help ensure the land stays viable for agricultural production in perpetuity. The property (commonly referred to as Sunset Ranch) is located in Pupukea on the Island of Oahu. Sunset ranch is ideally situated between small (1 and 2 acre agricultural lots) and other protected properties. Given the location and nature of the project, the State of Hawaii Legacy Lands Program as well as the Honolulu City and County Clean Water and Natural Lands Fund are contributing cost share towards the purchase of the easement.

Pursuant to the Memorandum of Understanding (MOU) between the Natural Resources Conservation Service (NRCS) and The State of Hawaii approved by the Board of Land and Natural Resources (BLNR) on August 22, 2008, I am submitting a project package relating to Sunset Ranch, and request that you evaluate the project and approve it for a mineral subordination and presentation to BLNR. The project package includes:

- A Geology and Surface Mining Evaluation Report prepared by Dr. Michael Garcia.
- Draft easement.
- Preliminary Title Report.
- Project description and location.
- Subordination document.
- \$100 Processing Fee

The NRCS has reviewed the Geology and Surface Mining Evaluation Report prepared by Dr. Michael Garcia. We concur with his conclusions that there is an absence of significant mineral resources on the Sunset Ranch property and a lack of commercial feasibility for surface mining or geothermal energy.

Helping People Help the Land

An Equal Opportunity Provider and Employer

We understand that the MOU states that the NRCS and the designated state official meet prior to selecting potential projects. In this case that was not possible due to our deadlines to obligate funds. The NRCS is working with our partners to establish effective timelines and will ensure that this process is incorporated. The NRCS fully intends to initiate meetings for future projects. However, we do feel that this project presents us an excellent opportunity to test and evaluate the remainder of the agreement. Using this project as a "test" will help NRCS and BLNR determine whether changes to the agreement will be required as well as establish timelines for future projects.

We look forward to working with you and your staff on this project as well as other future projects to help conserve our natural resources and protect our islands. If you have any questions please contact Michael Whitt at: (808) 541-2600 extension 153, or email at: michael.whitt@hi.usda.gov.

Sincerely,

LAWRENCE T. YAMAMOTO

Director

Pacific Islands Area

cc: Dennis Kimberlin, Assistant Director for Programs, NRCS PIA, Honolulu, HI Michael Whitt, Resource Conservationist, NRCS PIA, Honolulu, HI Molly Schmidt, Coordinator, Legacy Lands Conservation Program, Honolulu, HI Dr. Michael Garcia Consulting Geologist 1680 E-W Rd., Rm. 606 Honolulu, HI 96822

Aug. 8, 2009

Dear Blake McElheny,

Please find the enclosed report on the minerals and other mineable resources on your property, identified as the Sunset Ranch Easement, tax key map number (1) 5-9-005-067, on the island of O'ahu in Hawai'i. This report has been prepared to determine the probability of surface mining on the Easement in compliance with *Internal Revenue Code section* 170(H)(5)(B)(ii).

Based on my examination of the geology of this area and my extensive geologic experience in Hawai'i, I conclude that there is an absence of significant mineral resources on your easement and a lack of commercial feasibility for surface mining or geothermal energy. (See attached report, Geology of the Sunset Ranch Easement of O'ahu, Hawai'i, and its Potential for Surface Mining Potential.)

Thus, I believe that the probability of the extraction or removal of minerals or geothermal resources from the Property is so remote as to be negligible.

Sincerely,

Michael Garcia, Ph D

Marcio

Geology and Surface Mining Evaluation Report

for the Sunset Ranch Easement

Tax Map Key Number: (1) 5-9-005-067

O'ahu, Hawai'i

Submitted by Dr. Michael Garcia

Professor of Geology, University of Hawai'i

and Geological Consultant

Aug. 07, 2009

Table of Contents

Executive Summary	1
Introduction	····· 3
Regional Geology of O'ahu	4
Local Mining History and Surface Mining Potential	5
Geothermal Energy	7
Summary	8
References Cited	8
Author's Resume	9
	10

Executive Summary

This Report for the Sunset Ranch Easement covers Land Patent Grant Number 5192 to Chung Ah Get at Pūpūkea-Paumalū, State of Hawai'i, being LOT 19, as shown on Government Survey Registered Map Number 2252, Fifth Land District, in the City and County of Honolulu, Island of O'ahu, Hawai'i, bearing TMK: (1) 5-9-005-067 ("the Property"). The Property is located on the north shore of the island of O'ahu, which is part of Ko'olau Volcano, an extinct volcano. The rocks exposed in the area of the Property are relatively old basaltic lava flows (>2.2 million years).

Based on my examination of the published work on the geology of this area and my extensive geologic experience in Hawai'i, I conclude that there is an absence of significant mineral resources on the Property and a lack of commercial feasibility for surface mining or geothermal energy, and therefore the potential for such extraction is so remote as to be negligible.

Introduction

This report evaluates the presence of mineable minerals and geothermal energy, and the commercial feasibility of surface mining on the Property. Conclusions presented here are based on a review of the published literature, especially the Oahu Hydrographic Bulletin for the Territory of Hawaii (Stearns and Vaksik, 1935), a recent geologic summary of O'ahu (Sherrod et al., 2007), *Volcanoes in the Sea* (Macdonald and others, 1983), and the author's 33 years of field experience studying Hawaiian geology including five published geologic papers in the scientific literature on the O'ahu geology (see author's resume at end of report). No new field work was involved in this project.

Conclusions presented here are also based on the following information provided by who represents the Property owner:

- The Property owner intends to donate a conservation easement over the Property to a nonprofit organization.
- The owner intends the conservation easement to meet the requirements of section 170(h) of the Internal Revenue Code of 1986, as amended, and the regulations thereunder (the "Code").
- Section 170(h)(5)(B) of the Code denies favorable tax treatment of conservation
 easements where there is a reservation of mineral rights and the reservation will
 permit surface mining, unless, among other requirements, the probability of
 surface mining occurring on such property is so remote as to be negligible.
- Title reports for the Property show that the State of Hawaii has expressly reserved in its favor any minerals or metallic mines in the Property.
- For the purpose of such reservation, Hawaii Revised Statutes ("HRS") section 182-1 defines "minerals" as follows:

Any or all of the oil, gas, coal, phosphate. sodium, sulphur, iron, titanium, gold, silver, bauxite, bauxitic clay, diaspore, boehmite, laterite, gibbsite, alumina, all ores of aluminum and, without limitation thereon, all other mineral substances and ore deposits whether solid, gaseous or liquid, including all geothermal resources, in, on, or under any land, fast or submerged; but does not include sand, rock, gravel, and other materials suitable for use and used in general construction

Regional Geology of O'ahu

The island of O'ahu consists of two major shield volcanoes (Figure 1). The older volcano is Wai'anae on the west (ages of 2.9 to 4.0 m.y.), and younger is Ko'olau volcano on the east (ages of 2.2-2.9 m.y.; Haskins and Garcia, 2004; Ozawa et al., 2005; Sherrod et al., 2007). Erosion by wind, rain and the waves along with giant landslides on the west and northeast flanks of the island have extensively modified O'ahu (Garcia et al., 2006; Sherrod et al., 2007). The Sunset Ranch Easement is located on the northern flank of Ko'olau volcano (Figures 1 and 2).

The Ko'olau volcano preserves the remnants of the original shield form, with a dominant NW-trending dike complex and two shorter rifts to the ESE and SW from the deeply eroded caldera (Figure 1). The catastrophic Nu'uanu landslide is thought to have carried away 40% of the eastern portion of the Ko'olau volcano and scatter blocks up to the size of Lanai (40 km long) for distances up to 150 km away from the island (Satake et al. 2002; Garcia et al., 2006). The timing of this event is not well known but it probably occurred at about 2.5 million years ago (Garcia et al., 2006). Volcanism continued after the landslide until about 2.2 million years ago (Ozawa et al., 2005) partially filling the submarine void left by the landslide.

After about 1 million years of erosion and 1 km of island subsidence, volcanism began again from eruptions began scattered the southeast portion of Oahu on the Ko'olau shield (Macdonald et al., 1983). This period of renewed volcanism is commonly referred to as the Honolulu Volcanics (Figure 1). It produced 40 monogenetic eruptions from 0.7 to 0.1 million years ago (Ozawa et al., 2005). The areas of rejuvenated volcanism are at least 30 km from the Sunset Ranch area (Figure 1). Thus, there has been no volcanism in the Property area during the last <2.2 million years.

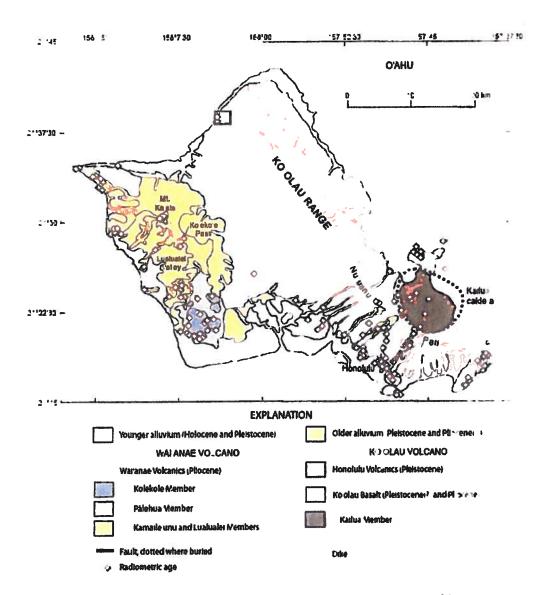


Figure 1. Geology map of the island of O'ahu (from Sherrod et al, 2007) Older Waianae volcano is on the west and younger Koolau on the east. Black box shows the location of the property and the area of Figure 2.

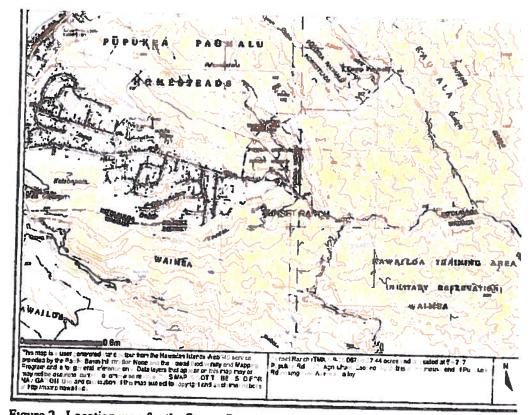


Figure 2 Location map for the Sunset Ranch Easement (area bounded by orange line and colored yellow) See Figure 1 for the location of this figure (black box on the northeast side of O ahu

Local Mining History and Surface Mining Potential

The island of O'ahu has no documented history of mining for any mineral No bauxite, other alumina or other mineral deposits (as defined by HRS 182-1) are known to exist on O'ahu (Macdonald and others, 1983). Thus, there is no known potential for surface mining on the Property

Geothermal Energy

Geothermal resources are considered a "mineral" for the purposes of HRS 182-1. A preliminary assessment of the geothermal energy potential of Ko'olau Volcano was made by Thomas (1985). No subsequent evaluation has been made of the volcano. Thomas (1985) concluded that the potential for development of a geothermal energy source for Ko'olua Volcano is very low. The Property is distant from any area of volcanism less than 2 million years old (Figure 1). Therefore, the potential for geothermal on the Property is extremely low and considered negligible.

Conclusion

Based on the foregoing, it is my opinion that the potential for surface or any other type of mining, or for geothermal energy development on the Property is so remote as to be negligible

References Cited

- Garcia, M.O., Sherman, S.B., Moore, G.F., Acton, G., Goll., R., Popova-Goll, I., Natland, J., 2006, Frequent landslides from Ko'olau Volcano: Results from ODP site 1223. Journal of Volcanology and Geothermal Research, 151, 251-268.
- Haskins, E.H., Garcia, M.O., 2004, Scientific drilling reveals geochemical heterogeneity within the Ko'olau Shield, Hawai'i. Contributions to Mineralogy and Petrology, 147, 162-188.
- Macdonald G.A., Abbott, A.T., Peterson F.L., 1983, Volcanoes in the Sea, University of Hawaii Press, p. 380-409.
- Ozawa, A., Tagami, T., Garcia, M.O., 2005, Unspiked K-Ar ages of Honolulu rejuvenated and Koolau shield volcanism on Oahu, Hawaii. Earth and Planetary Science Letters, 232, 1-11.
- Satake, K., Smith, J.R., Shinozaki, K., 2002, Volume estimate and tsunami modeling for the Nuuanu and Wailau landslides. In: Takahashi E, Lipman PW, Garcia MO, Naka J, Aramaki S (eds) Hawaiian volcanoes, deep underwater perspectives. American Geophysical Union Geophysical Monograph, 128, 333-346.
- Sherrod, D.R., Sinton, J.M., Watkins, S.E., Brunt, K.M., 2007, Geologic map of the State of Hawaii. U. S. Geological Survey Open-File Report, 2007-1089, 83 p.
- Stearns, H.T. and Vaksvik, K.N., 1942, Geology and groundwater resources of the island of Oahu, Hawaii. Division of Hydrography, Bulletin 1, 479 p.
- Thomas, D.M., 1985, Geothermal resources assessment in Hawaii. Hawaii Institute of Geophysics Report, HIG85-2, p. 40-55.

Resume Michael O. Garcia

Professor, Dept. of Geology and Geophysics, University of Hawai'i, Honolulu, HI 96822 Voice: (808) 956-6641 FAX: (808) 956-5512 Email: mogarcia@hawaii.edu

Education: Ph.D., Geology, University of California at Los Angeles, 1976 B.A., Geology, Humboldt State University, California, 1971

Research Interests: Hawaiian Geology, Igneous Petrology, Volcanology, Giant Landslides,

Professional Societies

Fellow, Geological Society of America, Life Member, Hawai'i Academy of Science Member, American Geophysical Union, Geochemical Society, International Association of Volcanology and Chemistry of the Earth's Interior

Honors

Visiting Professor, Macquarie University, Australia, Fall 2008 Visiting Professor, University of the Philippines, Spring 2006, Fall, 2009 Visiting Scholar, Australian National University, 2002 & 2004 President, Hawai'i Academy of Science, 1999-2001 Teaching Excellence Award, SOEST, University of Hawai'i, 1995

Positions Held

Technical Judge for Volcanology, U.S. Nuclear Regulatory Commission, 2007-present Associate Chair and Undergrad Advisor, Geology-Geophysics Dept., 2000-2001 Head, Volcanology-Geochemistry-Petrology Div., Geol.-Geophysics Dept., 2000-2002, 1983-5 Core Processing Supervisor, Hawai'i Scientific Drilling Project, 1999-2007 Chief Logger, Hawai'i Scientific Drilling Project, 1993 Visiting Professor, M.I.T., July-December, 1989 Acting Chairman, Geology-Geophysics Dept., Univ. of Hawai'i, 1988-89 Professor, Geology-Geophysics Dept., Univ. of Hawai'i, 1988 to present Mapper, U.S.G.S. Big Island Mapping Project, Summers of 1984-87 Visiting Associate Professor, Univ. of California at Santa Barbara, 1982 to 1983 Associate Professor, Geology and Geophysics Dept., Univ. of Hawai'i 1981 to 1988 Assistant Professor, Geology and Geophysics Dept., Univ. of Hawai'i, 1976 to 1981

Teaching Experience

Graduate Level Courses: Current Events in Volcanology, Oceanic Petrology, Writing Scientific Papers, California Geology, Seminars in Igneous Petrology and Geochemical Analytical Methods Undergraduate Courses: Igneous and Metamorphic Petrology, Geological Field Methods, Dynamic Earth and Lab, Rock and Minerals, Structural Geology

Professional Service

Co-Convener, AGU Special Session on Antarctica Geology, 2008 NSF-Deep Earth Processes Section of Earth Sciences, Committee of Visitors, 2008 Editorial Board, Journal of Geological Research, 2008-9 Editorial Board, Geology journal, 2007-2009 Scientific Committee, International Association of Volcanology, Iceland 2008 Convener, AGU Special Session on Rejuvenated Volcanism, 2005

Program Chair, Cities on Volcanoes 3 Conference, Hilo, Hawai'i, 2003 Co-convener, AGU Special Session on Pu'u O'o 20th Anniversary, 2002 US Science Coordinator for Japan-US Hawai'i Submarine Volcanism Project, 1998-2000 Editor, EOS, Volcanology-Geochemistry-Petrology Section, 1995-1997 Editorial Board, Journal of Geodynamics, 1990 to 1994 Editorial Board, Journal of Volcanology and Geothermal Research, 1980-1989 Nova Video "Hawai'i: Born of Fire", 1993 Discover Science Video "Hawai'i", 1989 Co-convener, U.S.-Costa Rica Joint Volcanology Seminar, San Jose, Costa Rica, 1982

Volcanological and Other Field Experience

Pu'u 'O'o Eruption, Kīlauea Volcano, mapping and lava sampling, 1983-present U.S. Geol. Survey Big Island Mapping Project, Kohala Volcano, summers of 1983-86 Field work on all Hawaiian islands except Ni'ihau, Galapagos Islands, Cascades (Mt. St. Helens, Mt. Shasta, Crater Lake volcanoes), Chile (Villarrica), Costa Rica (Arenal Volcano), Japan (Oshima Volcano), Iceland, Canary Islands, Azores, Eastern California, Nevada, Wyoming, Idaho, Indonesia, Antarctica, Peru, Philippines, Australia, New Zealand, Australia

Scientific Papers, Books and Maps

Authored or co-authored of 100+ published papers in the scientific literature and 3 geologic/ bathymetric maps of Hawai'i (student and postdoc co-authors are listed in italics) 2009

- Ireland, T.J., Walker, R.J. and Garcia, M.O., Highly siderophile element and ¹⁸⁷Os isotope systematics of Hawaiian picrites: Implications for parental melt composition and source heterogeneity. Chemical Geology, 260, 112-128.
- Flinders, A., Ito, I., Garcia, M.O., Gravity anomalies of the Northern Hawaiian Islands: implications on the shield evolutions of Kauai and Niihau. Journal of Geophysical Research, in review.
- Swinnard, L., Garcia, M.O., and Weis, D., Geochemistry of rejuvenated, post-shield and late shield volcanism on the island of Kaua'i, Hawai'i. Journal of Petrology, in review. 2008
- Garcia, M.O., Ito, G., Weis, D. and 16 others, Widespread secondary volcanism around the northern Hawaiian Islands, EOS, 52, 542-543.
- Garcia, M.O., Ito, E., Eiler, J., Oxygen isotope evidence for chemical interaction of Kilauea historical magmas with basement tocks. Journal of Petrology, 49, 757-769.
- Marske, J.P., Garcia, M.O., Pietruszka, A.P., Rhodes, J.M., Norman, M.D., Geochemical variations during Kilauea's Puu Oo eruption reveal a fine-scale mixture of mantle heterogeneities within the Hawaiian plume. Journal of Petrology, 49, 1297-1318.
- Rooney, J., Wessel, P., Hoeke, R., Weiss, J., Baker, J., Parrish, F., Fletcher, C. Chojnacki, J., Garcia, M.O., Vroom, P., Geology and geomorphology of coral reefs of the Northwestern Hawaiian Islands. In: Riegl B, Dodge RE (eds.) Coral Reefs of the World, Vol 1, Springer, Berlin, pp. 515-567.

2007

Garcia, M.O., Haskins, E.H., Stolper, E., Stratigraphy of the Hawaiian Scientific Drilling Project. Anatomy of a Hawaiian volcano. Geochemistry, Geophysics, Geosystems (G3), 8, Q02G20, doi:10.1029/2006GC001379.

- Fekiacova, Z., Abouchami, W., Galer, S. J. G., Garcia, M. O., Hofmann, A.W., Temporal evolution of Ko'olau Volcano: inferences from isotope results on the Ko'olau Scientific Drilling Project (KSDP) and Honolulu Volcanic Series. Earth and Planetary Science Letters, 261, 65-83.
- Marske, J. P., Pietruszka, A.J., Weis, D. Garcia, M.O., Rhodes, J.M., Rapid passage of a small-scale mantle heterogeneity through the melting regions of Kīlauea and Mauna Loa Volcanoes, Hawai'i, Earth and Planetary Science Letters, 259, 34-50.
- Mittelstaedt, E. and Garcia, M. O., Modeling the sharp compositional interface in the Pu'u 'Ō ō magma reservoir, Kilauea volcano, Hawaii. Geochemistry, Geophysics, Geosystems (G3), 8, Q05011, doi:10.1029/2006GC001519.
- Shamberger, P.J. and Garcia, M. O., Geochemical Modeling of Magma Mixing and Magma Reservoir Volumes During Early Pu'u 'O'o Eruption of Kilauea Volcano. Bulletin of Volcanology, 69, 345-352.
- Sobolev A.V., Hofmann A.W., Kuzmin D.V., Yaxley G.M., Arndt N.T., Chung S-L, Danyushevsky L.V., Elliott T., Frey F.A., Garcia M.O., Gurenko A.A., Kamenetsky V.S., Kerr A.C., Krivolutskaya N.A., Matvienkov V.V., Nikogosian I.K., Rocholl A, Suschevskaya N.M., Teklay M., Estimating the amount of recycled crust in sources of mantle derived melts. Science, 316, 412-417.

- Garcia, M.O., Caplan-Auerbach, J., De Carlo, E.H., Kurz. M.D. and Becker, N., Geology, geochemistry and earthquake history of Loihi seamount, Hawaii's youngest volcano. Chemie der Erde, 66, 81-108.
- *Garcia, M.O., Sherman, S.B., Moore, G.F., Acton, G., Goll., R., Popova-Goll, I., Natland, J., Frequent landslides from Ko'olau Volcano: Results from ODP site 1223. Journal of Volcanology and Geothermal Research, 151, 251-268.
- Pietruszka, A.J., Hauri, E.H., Carlson, R.W., Garcia, M.O., Remelting of recently depleted mantle within the Hawaiian plume inferred from the ²²⁶Ra-²³⁰Th-²³⁸U disequilibria of Pu'u 'Ö'ō eruption lavas. Earth and Planetary Science Letters, 244, 155–169.
- Wanless, V.D., Garcia, M.O., Rhodes, J.M., Weis, D., Norman, M., Alkalic lavas from Mauna Loa Volcano, Hawaii. Journal of Volcanology and Geothermal Research, 151, 141-155.
- Wanless, V.D., Garcia, M.O., Rhodes, J.M., Weis, D., Norman, M., Fornari, D. J., Kurz, M., Guillou, H., Submarine Radial Vents on Mauna Loa Volcano, Hawai'i. Geochemistry, Geophysics, Geosystems (G3), 7, Q05001, doi:10.1029/2005GC001086.
- Blanco, T. Ito, G., Becker, J., Garcia, M.O., Secondary Hawaiian volcanism formed by flexural arch decompression. Geochemistry, Geophysics, Geosystems, 6, Q08009, doi:10.1029/2005GC000945.
- Boyet, M., Garcia, M.O., Pik, R. and Albarède, F., A Search for ¹⁴²Nd Evidence of Primordial Mantle Heterogeneities in Plume Basalts. Geophysical Research Letters, 32, L04306, doi:10.1029/2004GL021873.
- Norman, M., Garcia, M.O., Pietruszka, A.J., Trace element distribution coefficients for pyroxenes, plagioclase, and olivine in evolved tholeites from the 1955 eruption of Kilauea Volcano, Hawai'i, and petrogenesis of differentiated rift zone lavas. Amercian Mineralogist, 90, 888-899.
- Ozawa, A., Tagamı, T., Garcia, M.O., Unspiked K-Ar ages of Honolulu rejuvenated and Koolau shield volcanism on Oahu, Hawaii. Earth and Planetary Science Letters, 232, 1-11.

2004

- *Haskins, E.H. Garcia, M.O., Scientific drilling reveals geochemical heterogeneity within the Ko'olau Shield, Hawai'i. Contributions to Mineralogy and Petrology, 147, 162-188.
- Norman M.D., Garcia M.O., and Bennett V.C., Rhenium and chalcophile elements in basaltic glasses from Ko'olau and Molokai volcanoes: magmatic outgassing and composition of the Hawaiian plume. Geochimica et Cosmichimica Acta. 68, 3761–3777.
- Seaman, C., Sherman, S., Garcia, M.O., and Baker, M., Stolper, E., Volatiles in submarine glasses from the HSDP2 drill core, Hilo, Hawaii. Geochemistry, Geophysics, Geosystems, 5, Q09G16 DOI 10.1029/2003GC000596.
- Stolper, E., Sherman, S., Garcia, M. O., Baker, M., Seaman, C., Glass in the submarine section of the HSDP2 drill core, Hilo, Hawaii. Geochemistry, Geophysics, Geosystems, 5, Q07G15, DOI 10.1029/2003GC000553.

- Garcia, M.O., Pietruszka, A. J., Rhodes, J. M., A Petrologic Perspective of the Summit Magma Chamber of Kīlauea Volcano, Hawai'i. J. Petrology, 44, 2313-2339.
- Garcia, M.O., Invited review of "Lava flows and lava tubes: What they are and how they form" DVD. EOS, 84, 586.
- Davis, M.G., Garcia, M.O., Wallace, P., Volatiles in glasses from Mauna Loa, Hawaii: Implications for magma degassing and contamination, and growth of Hawaiian volcanoes. Contributions to Mineralogy and Petrology, 144, 570-591.
- *Garcia, M.O., Submarine picritic basalts from Koolau volcano, Hawaii: Implications for parental magma composition and mantle source. *In* Takahashi, E., Lipman, P.W., Garcia, M.O., Naka, J., Aramaki, S. (Eds.) Hawaiian Volcanoes: Deep Underwater Perspectives, American Geophysical Union Monograph 128, 391-401.
- *Garcia, M.O., Introduction to Giant landslides in the northeast of Oahu: When, why and how? In Takahashi, E., Lipman, P.W., Garcia, M.O., Naka, J., Aramaki, S. (Eds.) Hawaiian Volcanoes: Deep Underwater Perspectives, American Geophysical Union Monograph 128, 221-222.
- Norman, M.D., Garcia, M.O., Kamenetsky, V., Nielsen, R., Olivine-hosted melt inclusions in Hawaiian picrites: Equilibrium, melting and source characteristics. Chemical Geology, 183, 1443-168.
- Sherman, S.B., Garcia, M.O. and Takahashi, E., Geochemistry of Volcanic Glasses From Piston Cores Taken North of O'ahu and Moloka'i Islands, Hawaii. *In* Takahashi, E., Lipman, P.W., Garcia, M.O., Naka, J., Aramaki, S. (Eds.) Hawaiian Volcanoes: Deep Underwater Perspectives, American Geophysical Union Monograph 128, 263-277.
- Takahashi, E., Lipman, P.W., Garcia, M.O., Naka, J., Aramaki, S. (Eds.) Hawaiian Volcanoes:
 Deep Underwater Perspectives, American Geophysical Union Monograph 128, 418 p.
 2001
- Garcia, M.O. and *Davis*, M.G., Submarine growth and internal structure of ocean island volcanoes based on submarine observations of Mauna Loa volcano, Hawaii. Geology, v. 29 p. 163–166.
- Herrero-Bervera, E., Walker, G.P.L., Canon-Tapia, E., Garcia, M.O., Magnetic fabric and inferred flow direction of dikes, conesheets and sill swarms, Isle of Skye, Scotland. Journal of Volcanology and Geothermal Research, 106, 3-4, 195-211.

Pietruszka, A.P., Rubin, K., Garcia, M.O., 226Ra-230Th-238U disequilibria of historical Kilauea lavas (1790-1982) and the dynamics of mantle melting within the Hawaiian plume. Earth Planetary Science Letters, 201, 15-31.

2000

- Garcia, M.O., Pietruszka, A. J., Rhodes, J. M., Swanson, K., Magmatic processes during the prolonged Puu Oo eruption of Kilauea Volcano, Hawaii. Journal of Petrology, 41, 967-990.
- Bennett, V.C., Norman, M.D., Garcia, M.O., Rhenium and platinum group element abundances correlated with isotopic compositions in Hawaiian picrites: sulfides in the plume. Earth Planetary Science Letters, 83, 513-526.
- Geist, D. and Garcia, M.O., The role of science and independent research during volcanic eruptions. Bulletin of Volcanology, 62, 59-61.
- Lassiter, J.C., Hauri, E.H., Reiners, P.W., Garcia, M.O., Generation of Hawaiian post-erosional lavas by melting of a mixed lherzolite/pyroxenite source: Implications for the chemical evolution of oceanic lithosphere. Earth Planetary Science Letters, 178, 269-284.
- Quane, S. Garcia, M.O., Guillou, H., Hulsebosch, T., Magmatic Evolution of the East Rift Zone of Kilauea Volcano Based on Drill Core from SOH 1. Journal of Volcanology and Geothermal Research, 102, 319-338.
- Naka, J., Takahashi, E., Clague, D., Garcia, M.O. (with 31 co-authors) Tectono-magmatic processes investigated at deep-water flanks of Hawaiian volcanoes. EOS Transactions, 81, 227-230.
- Seaman, C., Garcia, M.O., Stolper, E.M., Hawaii Scientific Drilling Project Core Logs and Data for 1999 Drilling. 4 volume set, 2 CDs.
- Yi, W., Halliday, A.N., Alt. J.C., Lee, D.-C., Rehkamper, M., Garcia, M.O., Langmuir, C.H., Su, Y., Cadmium, Indium, Tin, Tellurium and Sulfur in oceanic basalts: Implications for chalcophile element fractionation in the mantle. Journal of Geophysical Research, 105, 18,927-48.

1999

- Pietruszka, A.P. and Garcia, M.O., A rapid fluctuation in the mantle source and melting history of Kilauea Volcano inferred from the geochemistry of it historical summit lavas (1790-1982) Journal of Petrology, 40, 1321-1342.
- Pletruszka, A.P. and Garcia, M.O., The size and shape of Kilauea Volcano's summit magma storage reservoir: a geochemical probe. Earth Planetary Science, 167, 311-320.
- *Jackson, M.C, Frey, F.A., Garcia, M.O., Wilmoth, R.A., Geology and geochemistry of basaltic lavas and dikes from the Trans-Koolau Tunnel, Hawaii. Bulletin of Volcanology, 60, 381-
- Norman, M.D. and Garcia, M.O., Primitive tholeiitic magma compositions and source characteristics of the Hawaiian Plume: Constraints from Picritic Lavas. Earth Planetary Science Letters, 168, 19-26.
- Yang, H-Y, Frey, F.A., Clague, D., Garcia, M.O., Mineral chemistry of submarine lavas from the Hilo Ridge, Hawaii: Implications for processes at Hawaiian Rift zones. Contributions to Mineralogy and Petrology, 135, 355-372.

Garcia, M.O., Ito, E., Eiler, J. and Pietruszka, A., Crustal contamination of Kilauea Volcano magmas revealed by oxygen isotope analysis of glass and olivine from the Puu Oo eruption lavas. Journal of Petrology, 39, 803-817.

- Garcla, M.O., Rubin, K.H., Norman, M.D., Rhodes, J.M., Graham, D.W., Muenow, D., Spencer, K., Petrology and geochronology of basalt breccia from the 1996 earthquake swarm of Loihi Seamount, Hawaii: Magmatic history of its 1996 eruption. Bulletin of Volcanology, 59, 577-592.
- Norman, M.D., Griffin, W.L., Pearson, N.J., Garcia, M.O. and O'Reilly, S.Y., Quantitative analysis of trace element abundances in glasses and minerals: a comparison of laser ablation ICPMS, solution ICPMS, proton microprobe, and electron microprobe data. Journal of Atomic Analytical Spectrometry 13, 477-482.

1997

- Guillou, H., Garcia, M.O., and Turpin, L., Unspiked K-Ar dating of young volcanic rocks from the Loihi and Pitcairn seamounts. Journal of Volcanology and Geothermal Research, 78, 239-250.
- Loihi Science Team, Rapid response to the submarine activity at Loihi Volcano, Hawaii. EOS Transactions 78, 229-233,

1996

- Garcia, M.O., Turbidites from slope failure on Hawaiian volcanoes. Geological Society of London, Special Publication 110, 281-294.
- Garcia, M.O., Petrography, olivine and glass chemistry of lavas from the Hawaii Scientific Drilling Project. Journal of Geophysical Research, 101 11,701-713.
- Garcia, M.O., Rhodes, J. M., *Trusdell, F. A. and Pietruszka, A.*, Petrology of lavas from the Puu Oo eruption of Kilauea Volcano: III. The Kupaianaha episode (1986-1992). Bulletin of Volcanology, 58, 359-379.
- DePaolo D., Chadwick, W., Clague, D.; Feigenson, M., Frey, F., Garcia M.O., and 8 others, Hawaii scientific drilling project: summary of preliminary results. GSA Today, 6, 1-8
- Others and Garcia, M.O., contributors to the "Geologic Map of the island of Hawaii", Compiled by E. Wolfe and J. Morris., U.S. Geol. Survey Misc. Invest. Map I-2524.
- Yang, H.-J., Frey, F., Rhodes, J.M., and Garcia, M.O., Evolution of the Mauna Kea shield: Inferences from lava compositions recovered in the Hawaii Scientific Drilling Project. Journal of Geophysical Research, 11,747-11,768.

1995

- Garcia, M.O., Foss, D., West, H. and Mahoney, J., Geochemical and isotopic evolution of Loihi Volcano, Hawaii. Journal of Petrology, 36, 1647-1674.
- Garcia, M.O., Hulsebosch, T., and Rhodes, J., Olivine-rich submarine basalts from the southwest rift zone of Mauna Loa Volcano: Implications for magmatic processes and geochemical evolution. American Geophysical Union Monograph 92, Mauna Loa Decade Volcano, 219-239.
- Garcia, M.O., Hulsebosch, T., Rhodes, J.M., Kurz, M., Picritic magmas from Mauna Loa Volcano, Hawaii: Evidence for a hot, enriched plume source. Terra Nostra, Alfred-Wegner-Stiftung, Bonn, 44-47
- Kurz, M.D., Kenna, T.C., Kammer, D., Rhodes, J.M. and Garcia, M.O., Isotopic evolution of Mauna Loa volcano: A view from the submarine southwest rift. Am. Geophys. Union Monograph 92, Mauna Loa Volcano Revealed, 289-306.

1994

Garcia, M.O. and Hull, D., Turbidites from giant Hawaiian landslides: Results from Ocean Drilling Program Site 842. Geology 22, 159-162

g to g as a © (***** 95 ¥ 6

ERROR: ioerror
OFFENDING COMMAND: imagemask

STACK:

-dictionary--savelevel-

- *Frey, F., Garcia, M.O. and Roden, M., Geochemical characteristics of Koolau Volcano: Implication of intershield geochemical differences among Hawaiian volcanoes. Geochimica Cosmochimica Acta, 58, 1441-1462.
- Leeman, W., Gerlach, D., Garcia, M.O. and West H. Geochemical variation in lavas from Kahoolawe Volcano, Hawaii Contributions to Mineralogy and Petrology, 116, 62-77.
- Yang, H.-J., Frey, F, Garcia, M.O., and Clague, D. Geochemical characteristics of shield tholeiites from Mauna Kea, Hawaii Journal of Geophysical Research, 15, 577-594.
- Garcia, M.O., Jorgenson, B, Mahoney, J, Ito, E and Irving T., Temporal geochemical evolution of the Loihi summit lavas. Results from ALVIN submersible dives. Journal of Geophysical Research, 98, 537-550
- Garcia, M.O., Park, K.-H., Davis, G. Mattey, D and Staudigel, H., Petrology of lavas from the Line Islands Chain, Central Pacific Basin, in Mesozoic Pacific, AGU Monograph 77, 217-231.
- Garcia, M.O., Plio-Pleistocene volcanic sand layers from site 842: Products of giant landslides. Ocean Drilling Program, Leg 136, Science Vol., 53-63.
- Chadwick, W., Smith, J., Moore, J. G., Clague, D., Garcia, M.O., and Fox, C., Bathymetry of south flank of Kilauea Volcano, Hawaii. U.S.G.S. Misc. Field Invest. Map MF-2231.
- Chadwick, W., Moore, J. G., Garcia, M.O., and Fox, C., Bathymetry of south flank of Mauna Loa volcano, Hawaii. U.S.G.S. Misc. Field Invest. Map MF-2233.
- King, A., Waggoner, G., and Garcia, M.O., Geochemistry and petrology of basalts from ODP Leg 136. Ocean Drilling Program, Leg 136, 107-118.
- Garcia, M.O., Rhodes, J. M., Ho, R., Wolfe, E. W. and Ulrich, G. E., Petrology of lavas from episodes 2-47 of the Puu Oo eruption of Kilauea Volcano, Hawaii: Implications for magmatic processes. Bulletin of Volcanology, 55, 1-16.
- West, H., Garcia, M.O., Gerlach, D. C. and Romano, J., Origin of tholeiites from Lanai Volcano, Hawaii: Implications for geochemical heterogeneity in the source of Hawaiian lavas. Contributions to Mineralogy and Petrology, 112, 520-542.
- Garcia, M.O. and Kurz M D. Reply to comment on Mahukona: The missing Hawaiian volcano. Geology, 19, 1050-1051
- Chen, C. Y., Frey, F, Garcia, M.O., Dalrymple, G B. and Hart, S., Geochemistry of the tholeite to alkalıc basalt transition, Haleakala Volcano, Hawaii. Contributions to Mineralogy and Petrology, 106, 183-200.
- Frey, F. A., Garcia, M.O. Wise, W. S. Kennedy, A. Gurriet, P. and Albarede, F., The evolution of Mauna Kea Volcano, Hawaii Petrogenesis of tholeiitic and alkalic basalts. Journal of Geophysical Research, 96, 14347-14375
- Garcia, M.O., Kurz, M and Muenow, D, Mahukona A missing Hawaiian volcano. Geology 18, 1111-1114
- Garcia, M.O., 1990, Book review, Earth Science, MacMillan Publ. Co., in Bookwatch Reviews, 3, no. 5, p. 4.
- Chen, C.-Y., Frey, F. and Garcia, M.O., Evolution of alkalic lavas at Haleakala Volcano, East Maui, Hawaii: Major, trace element and isotopic constraints. Contributions to Mineralogy and Petrology, 105, 197-218.

- Frey, F., Wise, W., Garcia, M.O., West, H and Kwon, S. T., 1990, Evolution of Mauna Kea Volcano, Hawaii Petrologic and geochemical constraints on postshield volcanism Journal of Geophysical Research, 95, 1271-1300.
- Hoffmann, J., Ulrich, G. and Garcia, M.O., Horizontal ground deformation patterns and magma storage during the Puu Oo eruption, Kilauea Volcano, Hawaii: Episodes 22-42. Bulletin of Volcanology, 52, 522-531.
- Muenow, D., Garcia, M.O., Aggrey, K., Bednarz, U. and Schmincke, H.-U., Volatiles in submarine glasses as a discriminant for tectonic origin: Implications for the Troodos ophiolite. Nature. 343, 159-161.

1989

- Garcia, M.O., Muenow, D., Aggrey, K. and O'Neil, J., Major element, volatile and stable isotope geochemistry of Hawaiian submarine tholeiitic glasses. Journal of Geophysical Research, 94, 10,525-10,538.
- Garcia, M.O., Ho, R., Rhodes, J. M. and Wolfe, E., Petrologic constraints on rift zone processes: Results from episode 1 of the Puu Oo eruption of Kilauea Volcano, Hawaii. Bulletin of Volcanology, 52, 81-96.

- Garcia, M.O. and Wolfe, E., Petrology of the lavas from the Puu O'o eruption of Kilauea Volcano, Hawaii: Phases 1-20. In U.S.G.S. Prof. Paper 1463, 127-143.
- Fornari, D., Garcia, M.O., Tyce, R. and Gallo, D, Morphology and structure of Loihi Seamoun based on SeaBeam sonar mapping. Journal of Geophysical Research, 93, 15,227-15,238.
- Ho, R. and Garcia, M.O., Origin of differentiated lavas at Kilauea Volcano, Hawaii: Implications from the 1955 Eruption. Bulletin of Volcanology, 50, 35-46.
- Karl, D., McMurtry, G., Malahoff, A. and Garcia, M.O., Loihi Seamount: A mid-plate volcano with a distinctive hydrothermal system. Nature, 335, 532-535.
- Spengler, S. and Garcia, M.O., Geochemical evolution of Hawi Formation lavas, Kohala Volcano, Hawaii The hawaite to trachyte transition. Contributions to Mineralogy and Petrology, 99, 90-104.
- West, H., Garcia, M.O., Frey, F. and Kennedy, A., Evolution of alkalic cap lavas, Mauna Kea Volcano, Hawaii. Contributions to Mineralogy and Petrology, 100, 383-397.

 1987
- Garcia, M.O., *Grooms*, D. and Naughton, J., Petrology and geochronology of volcanic rocks from seamounts along and near the Hawaiian Ridge. Lithos, 20, 323-336.
- Garcia, M.O. and *Presti*, A., Glass in garnet pyroxenite xenoliths from Kaula Island, Hawaii Product of infiltration of host nephelinite. Geology, 15, 904-906.
- Kurz, M., Garcia, M.O., Frey, F. and O'Brien, P., Temporal helium isotopic variations within Hawaiian volcanoes: Basalts from Mauna Loa and Haleakala. Geochimica Cosmochimica Acta, 51, 2905-2914.
- Porter, S., Garcia, M.O., Lockwood, J. and Wise, W., Guidebook for Mauna Loa-Mauna Kea Kohala Field Trip. Hawaii Symposium on How Volcanoes Work, 40 pp.
- Regan, M., Gill, J., *Malavassi, E.* and Garcia M.O., Changes in magma composition at Arenal Volcano, Costa Rica, 1968-1985: Real-time monitoring of open system differentiation. Bulletin of Volcanology, 49, 415-434.
- West, H., Gerlach, D., Leeman, W. and Garcia, M.O., Isotopic constraints on the origin of Hawaiian lavas from the Maui Volcanic Complex, Hawaii. Nature, 330, 216-220.

- Wolfe, E., Garcia, M.O. and 5 others, The Puu O'o eruption of Kilauea Volcano, episodes 1-20. In U.S.G.S. Prof. Paper 1350, Chapter 17, 471-508.
- 1986
- Garcia, M.O., Frey, F. and *Grooms, D.*, Petrogenesis of volcanic rocks from Kaula Island, Hawaii: Implications for the origin of Hawaiian phonolites. Contributions to Mineralogy and Petrology, 94, 461-471.
- Byers, C., Garcia, M.O. and Muenow, D., Volatiles in submarine basaltic glasses from the East Pacific Rise at 21°N: Implications for MORB sources and formation of sheet flows. Earth and Planetary Science Letters, 79, 9-20.
- Matson, D., Muenow, D. and Garcia, M.O., Volatiles in phologopite micas from S. African kimberlites. Contributions to Mineralogy and Petrology, 93, 399-408.

 1985
- Byers, C., Garcia, M.O. and Muenow, D., Volatiles in pillow rim glasses from Loihi and Kilauea volcanoes, Hawaii. Geochimica et Cosmochimica Acta, 49, 1887-1896.
- Matson, D., Muenow, D. and Garcia, M.O., Volatiles in amphiboles from xenoliths, Vulcan's Throne, Grand Canyon, Arizona. Geochimica Cosmochimica Acta, 48, 1629-1636.
- Schlanger, S., Garcia, M.O. and 5 others, Geology and geochronology of the Line Islands. Journal of Geophysical Research, 89, 11,261-11,272.
- 1983
- Byers, C., Muenow, D. and Garcia, M.O., Volatiles in ferrobasalts and andesites from the Galapagos Spreading Center, 85° to 86°W. Geochimica Cosmochimica Acta,47, 1551-1558 1982
- Garcia, M.O., Petrology of the Rogue River island arc complex, southwestern Oregon. American Journal of Science, 282, 783-807.

1981

- Dalrymple, G. B., Clague, D., Garcia, M.O. and Bright, S., Petrology and K-Ar ages of dredged samples from Laysan and Northamptom volcanoes, Hawaiian Ridge, and evolution of the Hawaii-Emperor chain. Bull. Geol. Soc. Am., 92, Part I, 315-318; Part II, 884-933.
- Garcia, M.O., Muenow, D. and Liu, N., Volatiles in Ti-rich amphibole megacrysts, southwest USA. American Mineralogist, 65, 306-312.
- Garcia, M.O., editor, G. A. Macdonald Special Memorial Issue. Bulletin of Volcanologique, 43-4, 671-772.
- Dalrymple, G. B. and Garcia, M.O., Age and chemistry of dredged rocks from Jingu Seamount, Emperor Seamount Chain. Deep Sea Drilling Program, Leg 55, 685-693.
- Easton, R. and Garcia, M.O., Petrology of the Hilina Formation, Kilauea Volcano, Hawaii. Bulletin of Volcanologique, G. A. Macdonald Memorial Volume, 43, 657-673.
- Muenow, D., Liu, N., García, M.O. and Saunders, A., Volatiles in submarine volcanic rocks from the spreading axis of the East Scotia Sea Back-arc Basin. Earth and Planetary Science Letters, 47, 272-278.

- Garcia, M.O., Petrology of the Rogue and Galice formations, Klamath Mountains, Oregon. Identification of a Jurassic island arc. Journal of Geology, 87, 29-41.
- Garcia, M.O., Liu, N. and Muenow, D., Volatiles in submarine volcanic rocks from the Mariana Island Arc and Trough. Geochimica Cosmochimica Acta, 46, 305-312.

- Garcia, M.O. and Jacobson, S., Crystal clots, amphibole fractionation and the evolution of calcalkaline magmas. Contributions to Mineralogy and Petrology, 69, 319-327.
- Garcia, M.O. and Sinton, J. M., Field Trip Guide to the Hawaiian Islands, Oahu and Maui. Hawaii Institute of Geophysics Special Publication, 1, 117 pp. 1978
- Garcia, M.O., Criteria for the identification of ancient volcanic arc. Earth Science Reviews, 14, 147-164.





Project Description: The Natural Resource Conservation Service (NRCS) of the United States Department of Agriculture, the Maui Coastal Land Trust (MCLT), North Shore Community Land Trust (NSCLT), and The Trust for Public Land (TPL), are all working with the owner of the 27.44 acre Sunset Ranch (The Ranch) to preserve this unique property's agricultural legacy and protect it from future development. With funding provided by the Farm and Ranchland Protection Program (FRPP) through the NRCS, the State of Hawaii Legacy Land Conservation Fund, and the Honolulu City and County Clean Water and Natural Lands Fund. MCLT will be purchasing a conservation easement over the Ranch that will dedicate the land to agricultural and ranch uses in perpetuity. MCLT will be transferring the conservation easement to NSCLT, which is best positioned to monitor the easement locally. TPL is providing transactional and other technical assistance.

The following funds have been secured towards a total of \$2 1 to \$2 3 million (preliminary estimated value) purchase price for the easement

\$1 1 million
\$609,425 00
USDA Farm and Ranch Lands Preservation Program (secured, exp 6-30-2010)
State of Hawai's Legacy Lands Program (approved by Commission & BLNR, approved by Governor)

\$609,425 00 Honolulu City and County Clean Water and Natural Lands Fund (approved by

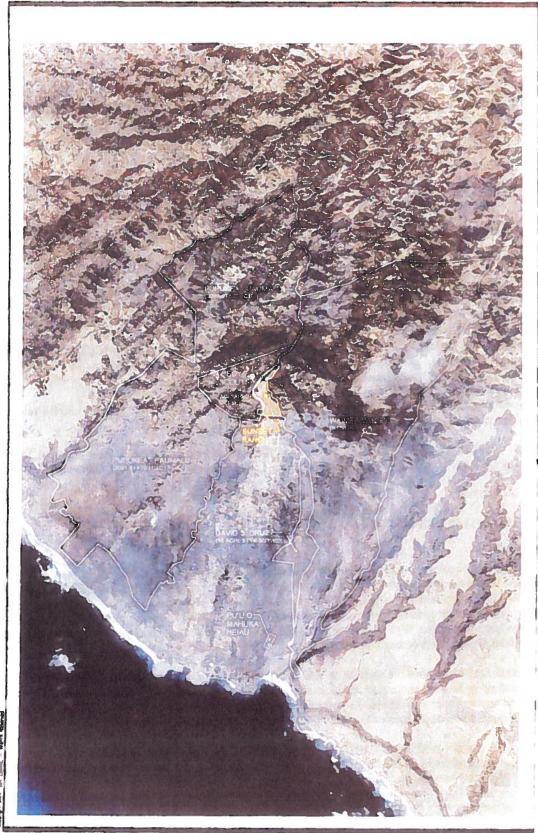
Commission, approved by Council)

\$2,318,850.00 million TOTAL

The Ranch's owner had previously determined that the highest and best use would be a 12-lot gated agricultural subdivision development with an average lot size of two acres. However, the owner is currently pursuing the preferred alternative of a conservation easement that will preserve the view-shed, maintain adequate trail access, preserve the natural beauty of the surrounding area and its agricultural/ranching heritage, foster further public/private partnerships (e.g., native plant nursery for Waimea Valley/Hi'ipaka LLC), serve as a unique hub connecting protected public resources, and prevent the previously planned residential subdivision in perpetuity

Sunset Ranch currently utilizes the existing on-site infrastructure and resources to conduct pasture grazing horse boarding and riding lessons, raises pigs and chickens, and is working to revitalize the native Hawaiian plant nursery that once thrived on the property. Through the proposed conservation easement the Ranch and NSCLT seek to permanently limit the allowable uses of the land primarily to pasture grazing and farming activities

Location: The one of a kind Ranch is located on the North Shore of O'ahu. Pūpukea, mauka of Pu'u o Mahuka Heiau and is situated at the meeting point of 4 important conservation and public recreation areas: 1) the recently protected 1.144 acre Pūpūkea Paumalū Park Reserve. 2) Waimea Valley 3) the Pūpūkea Boy Scout Camp, and 4) the Na Ala Hele Kaunala Loop Trail Access to more than 25 miles of hiking trails and a public hunting area is located directly on the border of the property. See attached maps



0 600 1000 2400 NORTH BEALS ON PRET



STATUS REPORT

Maximum liability limited to \$3,500.00

This report (and any revisions thereto) is issued solely for the convenience of the titleholder, the titleholder's agent, counsel, purchaser or mortgagee, or the person ordering it.

SCHEDULE A

Title Guaranty of Hawaii, Incorporated, hereby reports that, subject to those matters set forth in Schedule "B" hereof, the title to the estate or interest to the land described in Schedule "C" hereof is vested in:

PIETSCH PROPERTIES, LLC, a Hawaii limited liability company, as Fee Owner

This report is dated as of May 13, 2009 at 8:00 a.m.

Inquiries concerning this report should be directed to SUSAN ILORETA.
Email siloreta@tghawaii.com
Fax (808) 521-0287
Telephone (808) 533-5836.
Refer to Order No. 200925013.

SCHEDULE B CONTINUED

4. The terms and provisions contained in the following:

INSTRUMENT : AGREEMENT

DATED : December 7, 1990

RECORDED : Document No. 90-198740

PARTIES : FERN LUCILLE PIETSCH, and CHARLES JOSEPH PIETSCH,

III, as Co-Trustees under that certain unrecorded Trust Agreement of Fern Lucille Pietsch dated

August 7, 1979, as amended; and the BOARD OF WATER

SUPPLY, City and County of Honolulu

RE : water service

Joinder by HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation, by instrument dated November 28, 1990, recorded as Document No. 90-198741.

- 5. Encroachments or any other matters as shown on survey map prepared by Gil P. Bumanglag, Land Surveyor, with Gil Surveying Services, Inc., dated July 22-24, 2005.
- 6. Encroachments or any other matters which a survey prepared after July 22-24, 2005 would disclose.

7. MORTGAGE

MORTGAGOR : PIETSCH PROPERTIES, LLC, a Hawaii limited liability

company

MORTGAGEE : GREGORY C. PIETSCH and JEFFREY G. PIETSCH, Trustees

of the Fern Lucille Pietsch Trust dated August 7, 1979, as amended April 14, 1982, May 6, 1985, March

21, 1989, and June 7, 2000

DATED . October 31, 2005

RECORDED : Document No. 2005-221483

AMOUNT : \$3,200,000.00

SCHEDULE B CONTINUED

MORTGAGE 8.

MORTGAGOR : PIETSCH PROPERTIES, LLC, a Hawaii limited liability

company

MORTGAGEE : THE DIANA PIETSCH HEWETT TRUST dated July 9, 2007

DATED

: May 1, 2009

RECORDED : Document No. 2009-062518

AMOUNT : \$1,200,000.00

Any unrecorded leases and matters arising from or affecting the 9. same.

END OF SCHEDULE B

SCHEDULE C CONTINUED

13.	13°	22'	72.6	feet to a pipe;
14.	78°	19'	244.0	feet to a pipe;
15.	30°	16'	272.0	feet to a pipe;
16.	82°	05'	297.0	feet to a pipe;
17.	71°	57'	413.0	feet to a fence post;
18.	183°	38'	849.0	feet along Lot 18 and along the fence to the point of beginning and containing an area of 27.44 acres, more or less.

BEING THE PREMISES ACQUIRED BY LIMITED WARRANTY DEED

GRANTOR	: GREGORY C. PIETSCH and JEFFREY G. PIETSCH, Trustees
	of the Fern Lucille Pietsch Trust dated August 7
	1979, as amended April 14, 1982, May 6, 1985, March

21, 1989 and June 7, 2000

: PIETSCH PROPERTIES, LLC, a Hawaii limited liability GRANTEE

company

DATED : October 31, 2005

RECORDED : Document No. 2005-221482

END OF SCHEDULE C

GUIDELINES FOR THE ISSUANCE OF INSURANCE

- A. Taxes shown in Schedule B are as of the date such information is available from the taxing authority. Evidence of payment of all taxes and assessments subsequent to such date must be provided prior to recordation.
- B. Evidence of authority regarding the execution of all documents pertaining to the transaction is required prior to recordation. This includes corporate resolutions, copies of partnership agreements, powers of attorney and trust instruments.
- C. If an entity (corporation, partnership, limited liability company, etc.) is not registered in Hawaii, evidence of its formation and existence under the laws where such entity is formed must be presented prior to recordation.
- D. If the transaction involves a construction loan, the following is required:
 - (1) a letter confirming that there is no construction prior to recordation; or
 - (2) if there is such construction, appropriate indemnity agreements, financial statements and other relevant information from the owner, developer, general contractor and major subcontractors must be submitted to the Title Company for approval at least one week prior to the anticipated date of recordation.

Forms are available upon request from Title Guaranty of Hawaii.

- E. Chapter 669, Hawaii Revised Statutes, sets forth acceptable tolerances for discrepancies in structures or improvements relative to private property boundaries for various classes of real property. If your survey map shows a position discrepancy that falls within the tolerances of Chapter 669, call your title officer as affirmative coverage may be available to insured lenders.
- F. The right is reserved to make additional exceptions and/or requirements upon examination of all documents submitted in connection with this transaction.
- G. If a policy of title insurance is issued, it will exclude from coverage all matters set forth in Schedule B of this report and in the printed Exclusions from Coverage contained in an ALTA policy or in the Hawaii Standard Owner's Policy, as applicable. Different forms may have different exclusions and should be reviewed. Copies of the policy forms are available upon request from Title Guaranty of Hawaii or on our website at www.tghawaii.com.

DATE PRINTED: 5/28/2009

CLASS BREAKDOWN FOR TAX MAP KEY BELOW:

```
TAX MAP KEY
              DIVISION ZONE SECTION PLAT PARCEL HPR NO.
                (1) 5 9 005 067 0000
 CLASS: 1
                         AREA ASSESSED:
                                                             5,000 SF
               BUILDING $ 475,000
EXEMPTION $ 0
NET VALUE $ 475,000
LAND $ 360,400
EXEMPTION $ 0
NET VALUE $ 360,400
TOTAL NET VALUE $ 835,400
                              TAX MAP KEY
             DIVISION ZONE SECTION PLAT PARCEL HPR NO.
                (1) 5 9 005 067 0000
 CLASS: 3
                          AREA ASSESSED:
                                                            3,006 SF
              BUILDING $ 13,500
EXEMPTION $ 0
NET VALUE $ 13,500
LAND $ 102,200
EXEMPTION $ 0
NET VALUE $ 102,200
TOTAL NET VALUE $ 115,700
                            TAX MAP KEY
            DIVISION ZONE SECTION PLAT PARCEL HPR NO.
              (1) 5 9 005 067 0000
CLASS: 5
                           Area Assessed:
                                                       1,187,271 SF
                              $ 143,400
$ 0
$ 143,400
$ 981,200
              BUILDING
              EXEMPTION
              NET VALUE
              LAND
             EXEMPTION $ 0
NET VALUE $ 981,200
             TOTAL NET VALUE $ 1,124,600
```

LAND COURT SYSTEM

REGULAR SYSTEM

Return by Mail (X) Pickup () To:

Tom Pierce Attorney at Law A Limited Liability Law Corporation P.O. Box 798 Makawao, HI 96768

TMK: (1) 5-9-005-067

Total No. of Pages: _____

SUBORDINATION OF MINERAL RIGHTS

SUBORDINATION OF STATE OF HAWAII MINERAL RIGHTS

THIS SUBORDINATION OF STATE OF HAWAII MINERAL RIGHTS ("Subordination") is entered into by THE STATE OF HAWAII by and through its Board of Land and Natural Resources, whose mailing address is P.O. Box 621, Honolulu, Hawaii 96809 ("State of Hawaii"), in favor of the UNITED STATES OF AMERICA, by and through the Commodity Credit Corporation, whose mailing address is United States of America c/o the Natural Resources Conservation Service, 300 Ala Moana Boulevard, Room 4-118, Honolulu, Hawaii 96850 ("United States").

I. RECITALS

1 Pietsch Properties, LLC ("Landowner"), a Hawaii Limited Liability Company, is the owner of all of that certain parcel of land (being all of the land(s)

described in and covered by Land Patent Grant Number 5192 to Chung Ah Get) situate, lying and being at Pupukea-Paumalu, State of Hawaii, being LOT 19, as shown on Government Survey Registered Map Number 2252, Fifth Land District, City and County of Honolulu, Island of Oahu, Hawaii, bearing TMK. (1) 5-9-005-067, and more specifically described in the Limited Warranty Deed of Conveyance to Landowner, recorded with the Hawaii Bureau of Conveyance on October 31, 2005, and identified by Document Number 2005-221482 ("the Property").

- 2. Landowner has, or will, not later than concurrent with the recording of this Subordination, grant, record and encumber all of the Property with that certain document entitled *Grant of Conservation Easement (For Agricultural Preservation)* in favor of the United States and Maui Coastal Land Trust, a Hawaii nonprofit organization qualified to accept conservation easements pursuant to Hawaii Revised Statutes ("HRS") Chapter 198 ("the Conservation Easement").
- 3. The Conservation Easement is being purchased by Maui Coastal Land Trust with funding provided by various government programs, including the Farm and Ranchland Protection Program ("FRPP"), administered by the Natural Resources Conservation Service of the United States Department of Agriculture ("NRCS"). The purpose of the FRPP is to purchase conservation easements on land with prime, unique, or other productive soil for the purpose of protecting topsoil from conversion to nonagricultural uses.
- 4. As required by the FRPP and the NRCS, the Conservation Easement prohibits "[t]he exploration for, or development and extraction of, minerals, hydrocarbons and geothermal resources on, below or through the surface of the Property" ("the Easement Mining Restrictions") In addition, NRCS will ordinarily release the FRPP funds for purchase of a conservation easement only when it can be shown by the parties to the transaction that all minerals rights are subordinate to the conservation easement.
- 5. The Property is encumbered by a reservation of rights in favor of the State of Hawaii for all "minerals," as defined by HRS Section 182-1, including, among others, oil, gas, rock minerals and geothermal resources ("Mineral Rights") that precedes the Conservation Easement.
- 6. Pursuant to Section 182-2(a) of the Hawali Revised Statutes, the State of Hawaii, through its Board of Land and Natural Resources ("Land Board") may release, cancel, or waive the reservation of such Mineral Rights whenever it deems that an alternatively proposed land use, other than mining, is of greater benefit to the State of Hawaii.
- 7. After consideration at a duly noticed public hearing, the Land Board has determined the benefits of the Conservation Easement to the State of Hawaii outweigh the benefits of the Mineral Rights to the State of Hawaii.

II. SUBORDINATION OF MINERAL RIGHTS

NOW, THEREFORE, the State of Hawaii, in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, does hereby subordinate to the United States the State of Hawaii's Mineral Rights for the sole purpose of assuring the prohibitions on mining set forth in the Conservation Easement and to satisfy the requirements of the FRPP, subject only to the following conditions and contingencies:

- A. This Subordination is conditioned upon the execution and recordation of the Conservation Easement after review and approval by the Department of Land and Natural Resources, State of Hawaii.
- B. In the event the Conservation Easement at any time in the future is extinguished, abandoned, terminated or cancelled as to any part of the Property, the Mineral Rights shall be fully and automatically restored to the State of Hawaii as to such portions of the Property that are no longer encumbered by the Conservation Easement.
- C. Neither Landowner or Landowner's successors and assigns shall have the right to mine or to extract minerals from the Property, or to convey any right to mine to others.
- D. This Subordination shall be binding on and inure to the benefit of the State of Hawaii and the United States, respectively. The terms "State of Hawaii" and "United States" as and when used herein, or any pronouns used in place thereof, shall mean and include the singular or plural number, individuals, partnerships, trustees and corporations, and each of their respective heirs, personal representatives, successors and assigns.

and assigns.	
and Natural Resources, has caused the se	e STATE OF HAWAII, by its Board of Land al of the Department of Land and Natural e presents to be duly executed this day
Approved by the Board of Land and Natural Resources at its meeting held on, 20	STATE OF HAWAII By Its Chairperson and Member Board of Land and Natural Resources
APPROVED AS TO FORM.	
Deputy Attorney General	
Dated:	

MEMORANDUM OF UNDERSTANDING BETWEEN THE NATURAL RESOURCES CONSERVATION SERVICE AND THE STATE OF HAWAII

I. PARTIES

This Memorandum of Understanding (MOU) is entered into between the Natural Resources Conservation Service (NRCS) and the Board of Land and Natural Resources, State of Hawaii (Hawaii or State), collectively referred to as "the Parties", for the purpose set forth below.

II. PURPOSE

A. Background

NRCS administers an array of conservation casement programs. Several of these programs, including the Farm and Ranch Lands Protection Program (FRPP), 16 U.S.C. §§ 3838h and i, and the Wetlands Reserve Program (WRP), 16 U.S.C. § 3837, are currently implemented in Hawaii. The purpose of FRPP is to protect prime, unique, or important soils from being converted to non-agricultural uses through the purchase by the United States of conservation easements. The purpose of WRP is to restore and protect wetlands function and values through the use of restoration cost share agreements and the purchase of conservation easements by the United States on restored properties. To date, NRCS has obligated approximately \$6,500,000 which will protect 985 acres from development in Hawaii.

As part of the United States' legal requirement under 40 U.S.C. § 3111 to acquire legally sufficient title to the conservation easements it purchases, NRCS must ensure any outstanding rights will not adversely impact the conservation values (e.g., soil, water, wildlife resources) being protected. This includes considering the likelihood outstanding mineral rights will be exercised given the likely adverse impact the exercise of such rights would have on the conservation values the United States is seeking to protect.

The State of Hawaii owns the mineral subsurface rights in all lands in Hawaii and has the authority to exercise those rights. HRS §182-2(a).

The Parties agree that the protection of the conservation values by these federally funded easements is of great benefit to the people of the State of Hawaii as well as to people of the United States generally.

Such protection is consistent with Hawaii's public policy to protect and preserve lands having natural resource values and agricultural lands. This policy can be seen in the

enactment of the State's Legacy Lands Conservation laws which provides for the acquisition and management of lands which have natural, environmental, recreational, scenic, cultural, agricultural production, or historic value. Chap. 173A, Hawaii Revised Statutes (HRS).

B. Purpose

The Parties have a mutual interest in protecting natural resources and agricultural lands in the State of Hawaii. Consequently, the Parties wish to facilitate the protection of natural resources and agricultural lands by the United States through NRCS' purchase of conservation easements in Hawaii by agreeing to a process by which the State may consider and subordinate its mineral rights to the United States on individual conservation easement projects. Such subordinations will ensure that the subsurface mineral rights will not be accessed from the surface estate subject to the conservation easement, thereby ensuring the protection of the conservation values.

This MOU sets forth this subordination process, including the roles and responsibilities of the Parties. It is the mutual intent of the Parties that by working collaboratively as set forth below subordinations on conservation easement acquisitions will be facilitated.

III. RESPONSIBILITIES

A. NRCS will:

- Utilize the State Technical Committee (STC) in developing ranking criteria and take under advisement all comments from the STC during the ranking process for conservation easement funding.
- During the ranking process, initiate a meeting with a designated State official to discuss proposed conservation easements and the State's subordination of its subsurface mineral rights for each proposed conservation easement application.
- 3. As soon as practicable after the Director of the Pacific Islands Area selects projects for potential funding based on ranking criteria, submit proposed project packages to the designated State official for evaluation and approval for mineral subordination and presentation to the Board of Land and Natural Resources. Packages will include NRCS's assessment of the likelihood that the outstanding mineral rights will be exercised, draft easement, title report, project description and location, subordination form, and any other relevant material.
- 4. For potentially funded conservation easement projects submitted by NRCS to the State in which one of the State's executive agencies is not the intended grantee of the easement or for which the State is not providing any funding, NRCS will assist the State in obtaining administrative fees necessary to cover the State's

costs associated with required public notices and public hearings if such fees are legally applicable at the time of processing.

B. State will:

- 1. Participate in the State Technical Committee process for recommending conservation easement ranking criteria.
- 2. Meet with NRCS to provide an initial assessment of the likelihood of the State subordinating subsurface rights for each project being considered by NRCS for funding under the conservation easement programs. Obtain any additional information it needs to make such a preliminary assessment at this stage of the process to the greatest extent practicable. Any assessment will be subject to approval by the Board of Land and Natural Resources.
- 3. For potentially funded conservation easement projects submitted by NRCS to the State in which one of the State's executive agencies is involved in the project either as a grantee of the easement or as a funder of the acquisition, make a determination whether to subordinate mineral rights for specific easement acquisition projects within 60 calendar days of receipt of NRCS' request.
- 4. For other potentially funded conservation easement projects submitted by NRCS to the State in which the one of the State's executive agencies is not the intended grantee of the easement or for which the State is not providing any funding, the State will evaluate and make a determination on whether to subordinate its mineral rights pursuant to the requirements of §182-4, HRS. The determination whether to subordinate mineral rights for the specific easement acquisition projects under this section should be made within 90 calendar days of receipt of NRCS' request.
- 5. Upon its determination whether to subordinate, the State shall either subordinate its mineral rights by executing and transmitting the subordination documents to NRCS, or decline to subordinate its mineral rights by notifying NRCS of such decision, in writing, including the reason(s) for the decision. In making its determination, the State will consider the relative value of the mineral rights at issue as compared to the benefit to the State and the public of protecting the land and its related conservation values through a conservation easement. A finding that the particular mineral rights at stake have little value as compared with the benefits of land conservation will weigh in favor of subordination of those mineral rights.

C. Both Parties will:

Agree to meet as necessary to review the subordination process and make refinements as needed.

IV. GENERAL PROVISIONS

- A. This MOU takes effect upon the signature of NRCS and the State and shall remain in effect for five years from the date of execution. This MOU may be amended or extended upon written request of either NRCS or the State and the subsequent written concurrence of the other party. Either NRCS or the State may terminate this MOU with a 30 day written notice to the other party.
- B. This MOU is not intended to, nor does it create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity, by any party against the Parties, its respective agencies, officers, or any person.
- C. NRCS and the State and their respective offices will carry out their own activities and utilize their own resources, including the expenditures of their own funds in pursuing the purposes of this MOU. Bach party will carry out its separate activities in a coordinated and mutually beneficial manner.
- D. Nothing in this MOU shall obligate or transfer any funds. Specific work projects or activities that involve the transfer of funds, services, or property between NRCS and the State will require execution of separate agreements and be contingent upon the availability of appropriated funds. Such activities must be independently authorized by appropriate statutory authority. Negotiation, execution, and administration of any such agreement must comply with all applicable statutes and regulations.

V. ADMINISTRATIVE CONTACTS

The administrative contact for NRCS for this MOU is:

Dennis G. Kimberlin
Assistant Director for Programs
Pacific Islands Area
Natural Resources Conservation Service

The administrative contact for the State for this MOU is:

Paul J. Conry
Administrator
Division of Forestry and Wildlife
Department of Land and Natural Resources

VI. AUTHORITY

NRCS enters into this MOU under the authority of its various conservation easement programs, including the Farm and Ranch Lands Protection Program, 16 U.S.C. §§ 3838h and i, and the Wetlands Reserve Program, 16 U.S.C. § 3837.

VII. APPROVAL

The undersigned Parties hereby agree to the terms and conditions set forth above.

Director

Pacific Islands Area

Natural Resources Conservation Service

Name

Chaffperson

Board of Land and Natural Resources

State of Hawaii

Approved by the Board of Land and Natural Resources at its meeting(s) held on <u>Aug. 22</u>, 2008

APPROVED AS TO FORM:

Deputy Attorney General

r			
	*		

Summary of Public Hearing Subordination of Mineral Rights on Private Lands in Pupukea, Oahu Wednesday, January 13, 2010

DLNR Staff Present:

Randall Kennedy, Natural Area Program Manager

Molly Schmidt, Legacy Land Conservation Program Coordinator

The public hearing was called to order at 5:30 p.m.

Public hearing officer Randall Kennedy stated that the purpose of the hearing was to accept testimony regarding the proposed subordination of State mineral rights, and gave an explanation of the processes for testifying at this hearing and initiating a contested case hearing. He stated that the November 19, 2009, BLNR submittal had authorized the hearing, and reviewed the public notice and statutory authority.

Michael Whitt, Resource Conservationist with the Pacific Islands Area (PIA) Natural Resources Conservation Service (NRCS) then gave a brief informational presentation on the NRCS request for mineral rights subordination. Mr. Whitt stated the following:

The Natural Resource Conservation Service (NRCS), Maui Coastal Land Trust (MCLT), North Shore Community Land Trust (NSCLT), and The Trust for Public Land (TPL), are all working with the owner of the 27.44 acre Sunset Ranch to preserve this property's agricultural value and protect it from future development. With funding provided by the Farm and Ranchland Protection Program (FRPP) through the NRCS, the State of Hawaii Legacy Land Conservation Fund, and the Honolulu City and County Clean Water and Natural Lands Fund, MCLT will be purchasing a conservation easement over the Ranch that will dedicate the land to agricultural and ranch uses in perpetuity. MCLT will be transferring the conservation easement to NSCLT, which is best positioned to monitor the easement locally. TPL is providing transactional and other technical assistance.

The Ranch is located on the North Shore of O'ahu, in Pūpūkea, and is situated at the meeting point of 4 important conservation and public recreation areas: 1) the recently protected 1,144 acre Pūpūkea-Paumalū Park Reserve; 2) Waimea Valley; 3) the Pūpūkea Boy Scout Camp; and 4) the Na Ala Hele Kaunala Loop Trail.

Sunset Ranch currently utilizes the existing on-site infrastructure and resources to conduct pasture grazing, horse boarding and riding lessons, and is working to revitalize a native plant nursery. Through the proposed conservation easement the Ranch seeks to permanently limit the allowable uses of the land primarily to pasture/grazing and farming activities.

As part of the United States' legal requirement under 40 U.S.C. to acquire legally sufficient title to the conservation easements it purchases, NRCS must ensure any outstanding rights will not adversely impact the conservation values being protected. This includes considering the likelihood that outstanding mineral rights will be exercised given the likely adverse impact the exercise of such rights would have on the conservation values the United States is seeking to protect.

It is important that the public understand that through a mineral subordination, the State of Hawaii still owns the mineral rights, but is legally agreeing to never exercise those rights so long as the easement exists. It is also important that the public understand that nothing in the subordination gives the US or the landowner rights to mine minerals from the property. The sole intent of the mineral subordination is to ensure that no activity that is potentially detrimental to the easement occur within the easement area.

Oral testimony was accepted:

- 1. Lea Hong, Hawaiian Islands Program Director, Trust for Public Land. Ms. Hong stated that she would like to stand on her written testimony (testimony attached).
- Blake McElheny, North Shore Community Land Trust (testimony attached. Mr. McElheny stated that he would like to stand on her written testimony (testimony attached).

One other person was present at the hearing, but did not provide testimony:

1. Doug Cole, North Shore Community Land Trust

Written testimony was provided:

- 3. Lea Hong, Hawaiian Islands Program Director, Trust for Public Land (testimony attached)
- 4. Blake McElheny, North Shore Community Land Trust (testimony attached)

The public hearing adjourned at 5:40 p.m.